

REMARKS

The present claims relate to a method for the preparation of a water-soluble glucose polymer having an ion-exchanging ability, a composition comprising a water-soluble glucose polymer prepared according to the method, a builder, a detergent, and a food.

Amendment Summary

Upon entry of this amendment, claims 1-13 will be pending.

Claim 1 has been amended to include the elements previously found in claims 2 and 7.

Claims 2 and 7 are accordingly canceled.

Claim 6 is canceled.

Claim 1 is also amended to further specify that the raw glucose polymer and the polyvalent carboxylic acid are first dissolved in water to form an aqueous solution. Support for this amendment is found on at least page 8, lines 7-9 of the specification.

Claims 1, 3-5, 8-10, and 12-13 are amended to specify a water-soluble glucose polymer. Support for this amendment is found on at least page 15, Table 1 of the specification.

Claims 4-5, 8-10, and 12-13 are amended to depend from claim 1.

No new matter is added by this Amendment. Applicant therefore respectfully submits that entry of this Amendment is proper.

Information Disclosure Statements

The Office Action stated that the Information Disclosure Statement (“IDS”) filed April 9, 2004 fails to comply with 37 C.F.R. § 1.98(a)(3) because it does not include a concise explanation of the relevance of each patent listed that is not in the English language.

Applicant respectfully submits that the IDS filed April 9, 2004 is proper. A concise explanation of the relevance for each foreign language document listed in the IDS is provided at page 2 of the IDS. In particular, page 2 of the IDS states that a submission of (i) an English-language abstract, (ii) a partial translation, or (iii) an English-language equivalent application has been made for each of the listed foreign language documents. Also, Applicant points out that on page 2 of the IDS it is stated that each of the listed foreign language documents is cited and discussed in the Background of the Invention section at pages 1 to 5 of the present specification.

Nonetheless, Applicant further gratefully acknowledges that the Examiner attached to the Office Action a copy of the Modified PTO/SB/08 A & B form submitted with the April 9, 2004 IDS. The Examiner both initialed all references listed in the form and signed the form, thereby indicating that each and every reference listed in the form had actually been made of record and considered.

Regarding the IDS filed in July 2004, Applicant respectfully requests that the Examiner acknowledge consideration of AT 342079 by initialing the reference. Apparently, the Examiner believed that no explanation was given of the relevance of AT 342079, and therefore the Examiner did not consider the reference. However, as stated at page 2 of the IDS filed July 2004, a concise explanation of the relevance of AT 342079 was provided in the form of an

English-language European Search Report, including at least that portion of the search report indicating the degree of relevance found by the EPO. MPEP §609.04(a) states that, where the information listed in an IDS is not in the English language, but was cited in a search report or other action by a foreign patent office in a counterpart foreign application, the requirement for a concise explanation of relevance can be satisfied by submitting an English-language version of the search report or action which indicates the degree of relevance found by the foreign office. A mere "X", "Y", or "A" indication on a search report is satisfactory. Therefore, Applicant respectfully requests that the Examiner initial AT 342079 to indicate that the reference has been considered.

Claim objections and rejections

The Office Action mailed on October 24, 2006 objected to claims 5-13 for allegedly being in improper multiple dependent form. Claims 1 and 4 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Carrington et al (US 4,247,568) (hereinafter "Carrington"). Additionally, claims 2 and 3 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Carrington.

Response to objection to claims 5-13

The Examiner objected to claims 5-13 for being in improper multiple dependent form. Applicant has amended the claims such that they are not in improper multiple dependent form. Applicant respectfully requests that this objection be withdrawn.

Response to rejection of claims 1-4 based on Carrington

Applicant respectfully requests reconsideration and withdrawal of the rejections based on Carrington.

Independent claim 1 relates to a method for the preparation of a water-soluble glucose polymer having an ion-exchanging ability. The present claims have the following important features:

- (a) that a raw glucose polymer and a polyvalent carboxylic acid are first dissolved in water to form an aqueous solution;
- (b) that the solution is then dried to prepare a uniform powdery mixture;
- (c) that the powdery mixture is subjected to a heat treatment so that the temperature of the powder upon the heat-treatment ranges from 100 to 125°C; and
- (d) that the raw glucose polymer is a specific one having the average degree of polymerization of from 4 to 123.

The Examiner rejects the claims based on Carrington. Carrington discloses a process for preparing a non-digestible food additive which comprises the step of heating a mixture of starch or starch hydrolysate and carboxylic acid at a temperature of 140 to 220°C (column 2, lines 1-6, claim 1). The food additives in Carrington are disclosed as and taught to be at least partially insoluble in water (see, e.g., column 5, lines 16-24 and Examples 1-6). Carrington further states that the mixture of starch or starch hydrolysate and carboxylic acid may be prepared in a number of ways before heating at 140 to 220°C. For example, solid starch materials and the edible acid

in powder form may be mixed and then dried, an aqueous solution of the edible acid may be sprayed onto starch or starch hydrolysate powder, or starch or starch hydrolysate powder may be dispersed in an aqueous solution of the edible acid and the slurry then dried (column 4, lines 19-33). The Examples similarly illustrate these diverse methods. For example, Example 1 describes that raw maize starch powder was blended with citric acid powder and the mixture was then heated at 180 °C (column 5, lines 45-52). Additionally, Example 5 describes that an aqueous solution of citric acid was sprayed onto the agitated starch powder to give a uniform distribution of citric acid in the starch powder and the mixture was then heated at 180 °C (column 6, lines 24-35). Example 6 describes that the starch powder was dispersed in water, citric acid was added to this dispersion, the slurry was then dried and heated to 180°C.

Applicant respectfully submits that the presently claimed invention is neither anticipated by nor rendered obvious by the teachings of Carrington. First, as mentioned above, the purpose of Carrington is to provide food additives that are at least partially insoluble in water, as opposed to the presently claimed method for procuding a water-soluble product.

In addition, Carrington notably does not teach or suggest that it is necessary to dissolve the starch or starch hydrolysate in water to attain the uniformity of powdery mixture and then to heat the powdery mixture at 100 to 125°C to obtain a water-soluble product.

With regard to the temperature range presently claimed, Carrington specifically states and claims that a temperature of from 140 to 220°C is used in the process it discloses. Therefore, the presently claimed temperature range is not anticipated by Carrington. In addition, there is nothing within Carrington that would motivate one of ordinary skill in the art to use a reduced

temperature and thereby allegedly arrive at Applicant's invention. Carrington is entirely concerned with using a heating step that heats the composition therein at a temperature of from 140 to 220°C. Therefore, Applicant also respectfully submits that this element of the present invention is not rendered obvious by Carrington.

Additionally, Carrington also fails to teach the importance of the presently claimed temperature range, for if the heating temperature is not in the range of 100 to 125°C, the presently claimed water-soluble glucose polymer is not created. Applicant specifically notes that if the heating temperature is lower than 100°C, an esterification reaction does not proceed, while if it is higher than 125°C, water-insoluble matter is generated, as shown on page 15, Table 1 of the specification. Thus, Applicant respectfully submits that this element of the present claims is neither anticipated by nor rendered obvious by Carrington.

Finally, the present claims are not anticipated by or rendered obvious by Carrington for another reason: if a raw glucose polymer and a polyvalent carboxylic acid are not first dissolved in water to form an aqueous solution as in step (a) above, the water-insoluble glucose polymer of the present claims is not created. Applicant shows this in Comparative Example 1, on pages 18-19 of the specification. Carrington does not disclose any preference for this method of mixing materials, and even if Carrington did disclose any preference for this method of mixing materials, which it does not, Carrington fails to disclose that this method is necessary to form the water-insoluble glucose polymer of the present invention. Therefore, Applicant respectfully submits that this element of the claimed invention is neither anticipated by nor rendered obvious by Carrington.

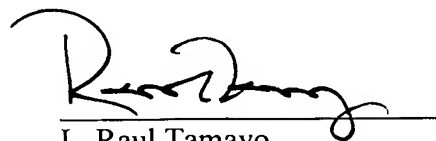
In view of the above, Applicant respectfully submits that the present invention is neither anticipated by nor rendered obvious by Carrington. Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejections based on Carrington.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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